

SPORT HUNTING PLAN

UNITED STATES FISH AND WILDLIFE SERVICE

ARTHUR R. MARSHALL LOXAHATCHEE NATIONAL WILDLIFE REFUGE



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I. INTRODUCTION

The Arthur R. Marshall Loxahatchee National Wildlife Refuge (Refuge) is the last remnant of the once vast northern Everglades ridge and slough landscape. It is located seven miles west of the city of Boynton Beach, in Palm Beach County, Florida. Palm Beach County is the largest county east of the Mississippi River in terms of land area and is the largest agriculture producing county in the east in terms of dollar value. The Refuge is located west of U.S. Highway 441, south of U.S. Highway 80, and 15 miles west of the Atlantic Ocean.

The Everglades Agricultural Area, which includes large sugar cane and winter vegetable fields, sod farms, and cattle ranches, is located northwest of the Refuge. Rapidly expanding communities and quickly disappearing small farms are found east of the Refuge where nearly six million people live from Ft. Pierce south to Miami (within two hours of the Refuge). Several development activities have recently been proposed adjacent to the western border of the Refuge, including an above-ground landfill, rock quarries, and a wind farm. The remainder of the central and southern Everglades, divided into Water Conservation Areas (WCAs) 2 and 3 and Everglades National Park, is located south of the Refuge.

Prior to 1951, beginning with the Swampland Act of 1845 and later the 1907 Everglades Drainage Act, excessive drainage activities occurred in the Everglades to pave the way for agriculture and population expansion. The three WCAs were constructed by the U.S. Army Corps of Engineers in the 1940's. Bounded by levees and connected only by a series of canals, these areas were placed under the jurisdiction of what is now the South Florida Water Management District (SFWMD), an agency of the State of Florida.

The Arthur R. Marshall Loxahatchee National Wildlife Refuge was established in 1951 under the authority of the Migratory Bird Conservation Act of 1929 and a 50 year license agreement between the State of Florida and the U.S. Fish and Wildlife Service (USFWS). The Refuge encompasses WCA-1 which is referred to as the 'Refuge interior'. WCA-1 is owned by the SFWMD, but managed by the USFWS under the license agreement as a national wildlife refuge. In 2002, the initial license agreement was revised and renewed for an additional 50 years. When the Refuge was established, it was known as the Loxahatchee National Wildlife Refuge. In 1986, the Refuge was renamed the Arthur R. Marshall Loxahatchee National Wildlife Refuge to honor former USFWS employee and noted South Florida conservationist, Arthur Raymond Marshall.

The current acreage of the Refuge interior is approximately 141,374 acres. In addition to the licensed lands, the Service owns 2,550 acres in fee title to the east and west of the Refuge interior. This acreage is sub-divided into four management compartments (A, B, C, and D) and a 400-acre cypress swamp. In total, the Refuge currently includes 143,924 acres (Figure 1).

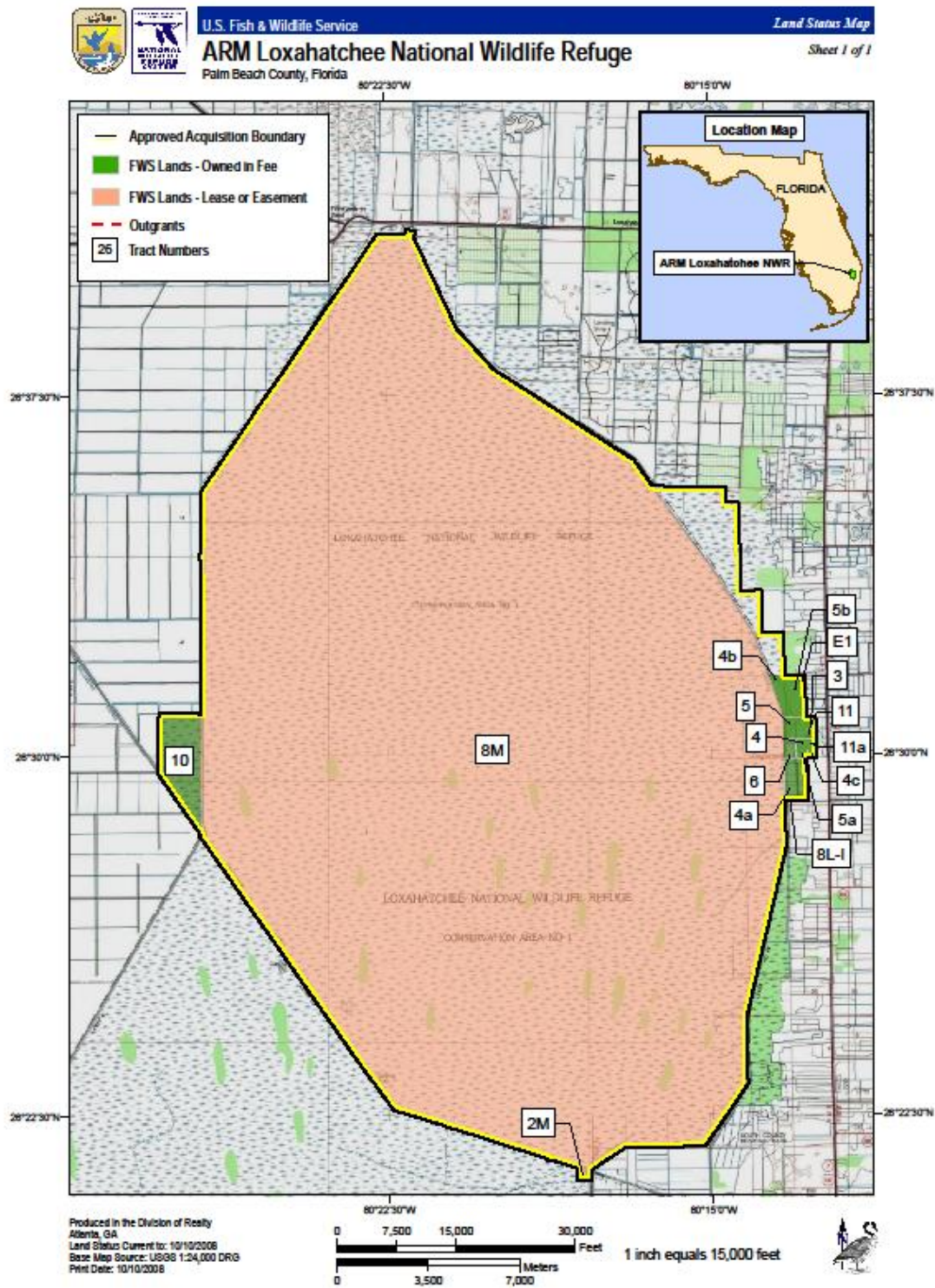


Figure 1. Arthur R. Marshall Loxahatchee National Wildlife Refuge Boundary

The Refuge provides a variety of habitat types including sloughs, wet prairies, sawgrass, tree islands, and cypress swamp. Sloughs are the deepest natural marsh communities in the Everglades and the underlying sediment layer is composed of peat soils. During the rainy season, water depth in sloughs may exceed three feet with the annual average depth of approximately one foot. The sloughs support numerous fish species, aquatic invertebrates, and other wildlife. Wet prairies are shallower than sloughs and characterized by short emergent plants. Wet prairies are the most prevalent vegetative community (approximately 50% land coverage) in most of the central and eastern portions of the Refuge and are generally found between sawgrass marshes and sloughs. This important vegetative community provides prey for wading birds and the endangered Everglade snail kite in the form of fish, aquatic invertebrates, and apple snails. Sawgrass communities (approximately 25% land cover) are characterized by the saw-edged sedge that dominates this type of habitat. Sawgrass areas often border tree islands separating them from wet prairies. The Refuge is characterized by thousands of tree islands that range from less than one acre to more than 300 acres. Approximately 20% of the Refuge interior is comprised of tree islands. Tree islands in the Refuge form when submerged peat patches rise to the surface of the water and plants become established on “pop-up tree islands” or when sawgrass ridges are invaded by shrubs ultimately leading to the formation of strand tree islands. A 400-acre cypress swamp community is located on the eastern edge of the Refuge. This cypress swamp is the largest remaining remnant of a cypress community on the east side of the Everglades that once stretched from the southeast corner of Lake Okeechobee to Ft. Lauderdale.

The Refuge provides important feeding, roosting, and nesting habitats for many species of birds, mammals, reptiles, amphibians, and fish. In a given year, as many as 257 species of birds may use the diverse habitats found on the Refuge. Of those, approximately 93 species are considered to be common or abundant during certain seasons. A variety of duck species including ring-necked, mottled, fulvous whistling, wood, ruddy, blue and green-winged teal, lesser scaup, northern pintail, American widgeon, northern shoveler, hooded merganser, and gadwall can be found on the Refuge during the fall and winter when water levels are appropriate and habitat is available (USFWS 2000).

Twenty-three species of mammals commonly found in south Florida are known to occur on the Refuge including the Mexican free-tailed bat (*Tadarida basiliensis*), cotton mouse (*Peromyscus gossypinus*), river otter (*Lutra canadensis*), Eastern gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), white-tailed deer (*Odocoileus virginianus*), round-tailed muskrat (*Neofiber alleni*), and marsh rabbit (*Sylvilagus palustris*) (USFWS 2000).

Amphibians and reptiles are also well represented on the Refuge. Approximately ten species of turtles, eight species of lizards, 24 snake species, and American alligators (*Alligator mississippiensis*) are present on the Refuge (USFWS 2000). Alligators are considered keystone species in the Everglades ecosystem because of their critical role in creating dry season refugia for the aquatic organisms that make up the prey base.

At least 63 plant or animal species listed by the State or Federal government as endangered, threatened, or species of special concern are known to occur on the Refuge, either currently or historically. These species include, but are not limited to: the wood stork (*Mycteria americana*), Everglade snail kite (*Rostrhamus sociabilis*), eastern indigo snake (*Drymarchon corais copuei*), Florida panther (*Felix concolor coryi*), bald eagle (*Haliaeetus leucocephalus*), Florida sandhill crane (*Grus canadensis pratensis*), snowy egret (*Egretta thula*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), and roseate spoonbill (*Ajaia ajaia*) (USFWS 2000).

II. CONFORMANCE WITH STATUTORY AUTHORITIES

The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, and the Refuge Recreation Act of 1962 authorize public hunting on refuges where the hunting program is compatible with the other major purposes for which the area was established. As part of this document, a compatibility determination was performed. Assuming harvest decisions are based on sound biological principles and user time and space restrictions are employed to minimize wildlife disturbance, hunting is deemed compatible and a worthwhile recreational opportunity to provide the public.

The mission of the USFWS is:

“...working with others to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of the American people.”

In addition to the overall mission of the USFWS, the National Wildlife Refuge System also has its own mission as set forth by congress in the National Wildlife Refuge System Improvement Act of 1997. It is as follows:

“...to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

The National Wildlife Refuge Improvement Act of 1997 identifies six priority public uses that are appropriate on National Wildlife Refuges, including hunting, fishing, wildlife observation, wildlife photography, environmental interpretation, and environmental education. The overall goal for the hunt program at the Refuge is develop and conduct a quality and biologically sound program that: 1) leads to enjoyable recreation experiences; 2) leads to greater understanding and appreciation of wildlife resources; and 3) aids in the conservation of wildlife populations and their habitats.

III. STATEMENT OF OBJECTIVES

The Refuge was authorized for establishment on January 1, 1951 as a breeding ground for migratory birds and other wildlife. The subsequent agreement with the Florida Fish

and Wildlife Conservation Commission (FWC) and the SFWMD permitted the USFWS to use WCA-1 for the migratory bird management program and “as a Wildlife Management Area, to promote the conservation of wildlife, fish and game, and for other purposes embodying the principles and objective of planned multiple land use.” In order to meet these and other USFWS objectives, the Refuge currently seeks the following objectives:

1. Restore and conserve the natural diversity, abundance, and ecological function of Refuge flora and fauna;
2. Conserve natural and cultural resources through partnerships, protection, and land acquisition from willing sellers;
3. Develop and implement appropriate and compatible wildlife-dependent recreation and environmental education and interpretation programs that lead to enjoyable experiences and greater understanding of the Everglades and the south Florida ecosystems;
4. Continue a partnership with SFWMD, including the license agreement for WCA-1;
5. Continue the development of an effective and productive staff to achieve the vision, goals, and objectives of this plan.

The objectives for the Refuge hunt program are:

1. Promote public understanding of, and increase public appreciation for, the area’s natural resources;
2. Provide opportunities for quality recreational and educational hunting experiences;
3. Maintain viable, diverse populations of wildlife based on sound biological principles and data that seek to maintain wildlife populations at sustainable levels;
4. Manage waterfowl in accordance with the North American Waterfowl Management Plan (North American Waterfowl Management Plan, 2004).

IV. ASSESSMENT

The currently used Sport Hunting Plan for the Refuge was submitted and approved in 1982. Species considered for harvest in the Refuge have included waterfowl and coots for all years and deer in 1983. The revised Refuge hunting plan is being submitted in order to update the plan developed in 1982. The revised plan also evaluates the species considered for hunting in the Arthur R. Marshall Loxahatchee National Wildlife Refuge

Comprehensive Conservation Plan (CCP) which included feral hogs, deer, and American alligators (USFWS 2000).

A. Waterfowl

Waterfowl species common on the Refuge include the ring-necked, mottled, fulvous whistling, wood, ruddy, blue and green-winged teal, lesser scaup, northern pintail, American widgeon, northern shoveler, hooded merganser, and gadwall. Coots are also common. Surveys completed between 1975 and 1980 revealed that the average peak wintering duck and coot population was more than 21,000 birds (USFWS, Annual Narratives 1975-1980). The FWC conducted an annual Mid-Winter Inventory survey (flown each year during one week in early January) from 1980-2001 (Table 1). The Refuge was included in these surveys until budget cuts ended the State program. From 1980 to 2001, the general trends in waterfowl numbers appear to be lower, and a great deal of within-season and year-to-year variation in waterfowl numbers was observed (USFWS, Annual Narratives, 1980-2001).

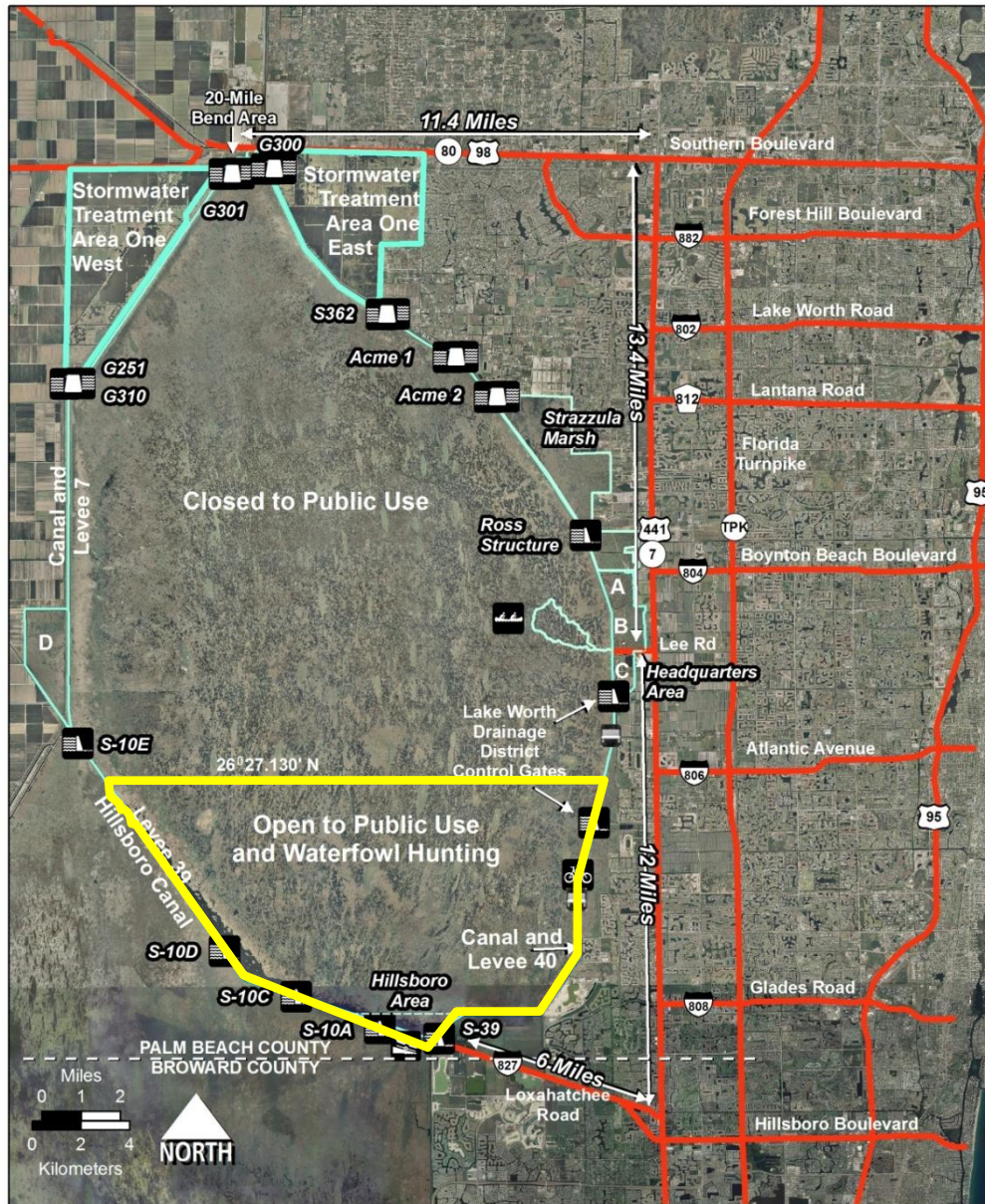
Table 1. Number of ducks surveyed per year during FWC surveys.

Year*	Number of Ducks Counted at Refuge by FWC
1980	16725
1981	2505
1982	1522
1983	648
1984	2661
1985	3185
1986	1252
1987	619
1988	868
1989	850
1990	5176
1991	12459
1994	1400
2000	1040
2001	2005
* State waterfowl surveys not completed 1992-1993 and 1995-1999.	

Available at: http://myfwc.com/media/1499274/duck_past_ckst_data.pdf.

This decline can be partially explained by regional decreases in waterfowl populations (USFWS 2001). Florida lost approximately 260,000 acres of freshwater, emergent wetlands between 1985 and 1996 (FWC 2011). These habitat types in Florida are essential for the annual life cycle of waterfowl influencing both survival and subsequent

reproduction (FWC 2011). Approximately 21% (30,000 acres) of the Refuge is available for waterfowl hunting during season, leaving up to 79% of the Refuge for waterfowl to forage and rest (sanctuary area) depending on environmental conditions (Figure 2).



Imagery based on Palm Beach County 2006 Aerial Photographs
Published August 11, 2008
Red Lines = 2008 Roads

Figure 2. Existing Refuge hunt boundary in the Arthur R. Marshall Loxahatchee National Wildlife Refuge at $26^{\circ} 27.130' N$ (indicated by yellow line).

Hunting opportunities available to the public should not have a substantial effect on waterfowl abundance or distribution due to low-to-moderate hunting pressure on the Refuge, as well as the established sanctuary area as described above. Compared to Stormwater Treatment Area 1 West (STA-1W) which was open to hunting in 2007 and other surrounding areas, the Refuge only contributes a small portion of the total waterfowl harvest in south Florida (FWC 2011) (Table 2).

Table 2. Total waterfowl harvest estimates from 2000 to present.

Harvest Year	Number of Ducks Harvested from Refuge*	Number of Ducks Harvested from STA-1W**
2000-2001	406	-
2001-2002	306	-
2002-2003	352	-
2003-2004	227	-
2004-2005	705	-
2005-2006	677	-
2006-2007	740	-
2007-2008	224	4,535
2008-2009	103	7,227
2009-2010	108	6,422
2010-2011	640	10,507

*Waterfowl harvest numbers from the Refuge came from the hunting section of past Refuge Annual Narratives.

**Waterfowl harvest estimates from STA-1W are based on public records found at http://myfwc.com/media/1499274/duck_past_ckst_data.pdf.

Season and Timing

The Refuge's open waterfowl season is concurrent with the State season. The Refuge participates in both the early teal and regular seasons. Hunters may only take duck and coot. Waterfowl hunt days are Wednesday through Sunday during the State season, and the Refuge is closed to hunting on Christmas Day. Daily shooting hours are thirty minutes before sunrise to 1 p.m., and all hunters must be out of the Refuge by 3 p.m. The Refuge opens at 4 a.m. to hunters during waterfowl season.

Access Location

All hunters are required to enter and leave the Refuge from the Headquarters Area or the Hillsboro Area. The hunting area is indicated on the Refuge Hunt Boundary Map (Figure 2). The Refuge allows hunting in the interior of the Refuge south of latitude line 26.27.130 and north of mile marker 12 and 14 (posted in canal; not shown on map). The Refuge does not allow waterfowl hunting from canals, levees, or those areas posted as closed.

Hunt Methods

Hunt methods will be in accordance with State regulations for waterfowl and coot hunting.

Estimated Resources Associated with Waterfowl Hunt

Biologist:

- Coordinate Annual Hunt meeting.
- Data summary and reporting from waterfowl season.
- 1 FTE; GS-7/9 level.

Law Enforcement:

- Provide routine law enforcement patrol during waterfowl season.
- 1 to 2 FTE; GS-9 and GS-12 level.

Material Development and Printing:

- Refuge Hunt Brochure annual development.

B. Other Migratory Birds

Migratory bird hunting, other than waterfowl as stated above, is not permitted. The dove population is restricted to upland areas along the levees and in the Headquarters complex. Dove hunting would conflict with other public use activities already established in those areas. The lack of tidal fluctuations and the secretive nature of rails would limit the success and quality of a rail hunt. As scheduled high water levels on the Refuge coincide with the State snipe season, water levels would prevent any significant concentrations of snipe and limit the quality and success of a hunt. Although gallinules are abundant along the canals and in the flats, a hunt is not proposed for two reasons: (1) the State gallinule season is from September to November and would require the administration of a separate hunt from the already established waterfowl hunt; and (2) there could be some confusion between the common gallinule and the purple gallinule resulting in the illegal taking of purple gallinule, a protected bird in the State of Florida.

C. White-tailed Deer

An experimental harvest for white-tailed deer was planned and held in 1983 (USFWS, 1983). Although the hunt was to take place over three consecutive weekends in the fall, controversy and legal actions surrounding the hunt resulted in only two weekends being available. Two deer were taken during the hunt. Legal mandates enacted by Congress on October 10, 1984 placed a rider on Public Law 98-473 (Funding for FY-85) that read, "None of the funds provided by this act to the United States Fish and Wildlife Service may be obligated or expended to plan for, conduct, or supervise deer hunting on the Loxahatchee NWR." This action and the relatively low number of deer observed in the interior in subsequent years resulted in the abandonment of deer hunting on the Refuge. Deer hunting is not being initiated through this updated plan due to the continued low deer population and inaccessibility to the area of the interior they occupy.

D. Feral Hogs

Currently, there is no feral hog hunting on the Refuge due to the lack of hogs observed within Refuge boundaries. One of the Public Use Goals and Objectives discussed in the

Refuge CCP was to develop a hunt plan for feral hogs in the Strazzulla Marsh by 2002 (USFWS 2000). The Refuge no longer manages the Strazzulla Marsh, and there have been very few sightings of hogs along the levees, and no sightings in the interior. Therefore, no hunt is planned for feral hogs within the Refuge.

E. Alligators

According to early Refuge personnel, the Refuge supported more and larger alligators per acre than most parts of the Everglades (1950s Annual Narratives). During the early 1950's through 1965, there was some concern that alligator populations had decreased due to hunting and not many large alligators were observed in the interior (1950-1965 Refuge Annual Narratives). In 1967 and 1970, a night count around the perimeter canal by Refuge staff resulted in the sighting of 1235 and 1881 alligators in 55 miles, respectively. Additional alligator surveys conducted by Refuge staff surveys in the Refuge canals from 1971-1989 showed fluctuating counts of alligators related, in part, to season and water level (Tables 3 and 4). In 1998, a series of regional alligator surveys, which included the Refuge, were initiated by researchers at the University of Florida (Mazzotti et al., 1999) (Tables 3 and 4). It should be noted that the variability between the 1971-1989 data and the 1998-present data is attributed to likely differences between survey methodologies, such as transect length and season, as well as differences in detectability due to variation in water levels.

Table 3. Total number of alligators observed in L-39 canal from 1971-1989¹ and 2003-2012².

Year	Total Number of Alligators Observed
1971	51
1972	971
1973	681
1974	389
1975	238
1976	473
1977	444
1978	198
1979	552
1980	132
1981	1434
1982	57
1983	304
1984	474
1985	810
1986	171
1987	320

1988	512
1989	161
2003	114
2004	139
2005	152
2006	122
2007	100
2008	72
2009	117
2010	193
2011	228
2012	134

¹Surveys conducted by Refuge staff.

²Surveys conducted by University of Florida

Table 4. Total number alligators observed in L-40 canal from 1971-1987¹ and 1999-2012².

Year	Total Number of Alligators
1971	433
1972	463
1973	139
1974	184
1975	93
1976	116
1977	131
1978	120
1979	70
1980	96
1981	546
1982	67
1983	94
1984	62
1985	164
1986	189
1987	95
1999	216
2000	466
2001	166
2002	63

2003	337
2004	156
2005	64
2006	142
2007	211
2008	89
2009	202
2010	236
2011	260
2012	147

¹Surveys conducted by Refuge staff.

²Surveys conducted by University of Florida

Historically, there has been no alligator hunt conducted on the Refuge; however, the FWC has been managing State hunts for many years within Florida (Table 5). During the CCP process (1998-2000), there was public interest expressed in having the Refuge opened to alligator hunting as a recreational use. Current monitoring data suggests that the Refuge could support a limited alligator hunt (See 2012 Sport Hunting Plan Environmental Assessment for more information). Therefore, in the interest of incorporating as many public use opportunities as ecologically and economically possible, an alligator hunt for recreational purposes has been developed.

Table 5. Florida Fish and Wildlife Conservation Statewide Alligator Harvest Data Summary 2000 – 2010.

Year	Average Length		Total State Harvest
	Feet	Inches	
2000	8	7	2551
2001	8	7	2267
2002	8	4	2161
2003	8	4	2829
2004	8	5	3237
2005	8	5	3460
2006	8	5	6430
2007	8	6	5963
2008	8	5	6377
2009	8	0	7839
2010	7	11	7736

Available at: http://myfwc.com/media/1357388/Alligator_Annual_Summaries.pdf.

In 2007, the SFWMD planned and implemented an alligator hunt in STA-1W, a manmade filter marsh adjacent to the northwestern portion of the Refuge. A second hunt

area within STA-1W was opened in 2009 (STA-1W South). The STA-1W is designed to improve the quality of water prior to being delivered to the Refuge. Alligators are very numerous in the STA-1W. A 2007 survey indicated a population estimate of 11,938 alligators over six feet within STA-1W (pers. comm. with Harry Dutton, FWC, 2011) due to the large number of canals, levees, and shallow areas providing favorable foraging and basking habitat, although nesting has not been observed. Due to the proximity to the Refuge and lack of nesting within the STA-1W, it is likely that the majority of the alligators in STA-1W migrated from the Refuge. Since alligators are harvested from both STA-1W to the north and WCA-2 to the south (Tables 6 and 7), the Refuge will need to ensure that negative cumulative impacts to alligator populations do not occur. Negative impacts will be avoided through monitoring as described below (see *Monitoring Plan*).

Additional information on cumulative impacts and monitoring is available in the 2012 Sport Hunting Plan Environmental Assessment.

Table 6. Stormwater Treatment Area 1West (STA-1W) alligator harvest per year.

Harvest Year	Number of Alligators Harvested STA-1W North (Harvest quota max = 200)	Number of Alligators Harvested STA-1W South* (Harvest quota max = 100)
2007	162	-
2008	164	-
2009	166	88
2010	158	72

*STA-1W South was opened as an Alligator Management Unit (AMU) in 2009.

Available at: http://myfwc.com/media/1357388/Alligator_Annual_Summaries.pdf

Table 7. Water Conservation Area 2 (WCA-2) alligator harvest per year.

Harvest Year	Number of Alligators Harvested WCA-2 (Harvest quota max = 22)
2003	20
2004	15
2005	17
2006	21
2007	15
2008	18
2009	10
2010	18

Available at: http://myfwc.com/media/1357388/Alligator_Annual_Summaries.pdf

The Refuge will work with the FWC to administer any alligator hunts that occur on the Refuge. Hunters will contact the State (FWC) for an alligator hunt permit application (Appendix A). Once a permit and CITES tags are received, hunters will follow all rules

and guidelines established by FWC for public lands hunts except as noted below in Refuge specific guidelines.

The Refuge's first hunt will consist of a limited alligator hunt scheduled for the fall of 2013. The 2012 alligator harvest quota for the Refuge was developed, in part; using modeling procedures developed and used by FWC staff (see 2012 Sport Hunting Plan Environmental Assessment for more information on harvest quota development and FWC modeling). It is anticipated that a total of eleven permits will be issued. Two alligators five feet or greater in length may be harvested per permit, totaling 22 alligators. Data suggests there may be a significant reduction in the number of sub-adult alligators (3-6') in some segments of the canal (FWC quota model output 2011 and 2012). Therefore, only alligators over five feet in length will be targeted for the hunt in order to avoid additional pressure on the sub-adult size class. It is expected that this size limit coincides with the preferred size class of hunters due to the value of the meat and hide. Hunting opportunities available to the public should not have a substantial effect on alligator abundance or distribution due to the low-to-moderate hunting pressure on the Refuge and the established sanctuary area.

Season and Timing

Alligator hunting will be limited to specific weekends from August 15 through November 1 and will not coincide with waterfowl hunting. The alligator hunt will be structured like the FWC's program used on the STAs, and will take place as follows: one hour before sunset on Friday night through one hour after sunrise Saturday morning, and one hour before sunset on Saturday night through one hour after sunrise Sunday morning. Alligator hunting shall be permitted the first two weekends during Harvest Period 1 (August) and the first two weekends during Harvest Period 2 (September). Following the close of Harvest Period 2, the remaining weekends in October will be open for alligator harvest permittees that possess unused CITES tags. Additional weekends per Harvest Period or weekdays may be added in the future if there is demand and resources are available. Specific dates for the alligator hunt will be provided on the harvest permit.

Access Location

Hunters will use the Hillsboro boat ramp to launch authorized boats, and will stay within the existing hunt boundary. Although the initial alligator hunt will be held strictly out of the Hillsboro boat ramp, the Refuge may consider opening the Headquarters Area (Lee Road) and 20 Mile Bend to the perimeter canals in the future. Approximately 21% (30,000 acres) of the Refuge is available for hunting during the season, leaving up to 79% of the Refuge for alligators to forage and rest (sanctuary area) depending on environmental conditions (Figure 2).

Hunt Methods

Alligators may be taken using hand held snares, harpoons, gigs, snatch hooks, artificial lures, manually operated spears, spear guns, and crossbows. Alligators may not be taken using baited hooks, baited wooden pegs, or firearms. Bang sticks are only permitted for taking alligators attached to a restraining line. Once an alligator is captured, it must be killed immediately. Once the alligator is dead, a CITES tag must be locked through the

skin of the carcass within six inches of the tip of the tail. The tag must remain attached to the alligator at all times. An alligator harvest report issued along with the hunt permit must be submitted to the Refuge within 24 hours of taking each alligator.

Monitoring Plan

FWC will conduct transect surveys within the hunt boundary of the perimeter canals during the spring in order to determine annual quotas in accordance with their standard procedures. In addition to quota-driven surveys, Refuge staff will conduct transect surveys in the spring and/or fall to: supplement the surveys conducted by FWC; monitor for cumulative effects; and assess if other areas (e.g., canals north of the hunt boundary) can be opened to recreational alligator hunting. Data collected will help managers determine hunt impacts and how many alligators can be sustainably harvested per year. Annual harvest quotas will be determined, in part; using the model FWC uses to set harvest quotas for all State-run alligator hunts. Refuge management will also incorporate Refuge priorities and goals into the development of annual quotas. It is important to note that the goal for the alligator hunt in the Refuge is to set annual harvest quotas that provide a high quality hunt while supporting multiple compatible uses, such as wildlife observation and providing wildlife refuge, rather than the maximum sustainable harvest. If annual analysis determines alligator populations have declined beyond acceptable levels, alligator harvest will be suspended until populations have recovered. Acceptable levels of decline will be determined by Refuge management in consideration of Refuge goals and objectives and the best available science.

More information on monitoring and quota determination can be found in the 2012 Sport Hunting Plan Environmental Assessment (Section 4.3.1.2).

Estimated Resources Associated with Alligator Hunt

Biologist:

- Two nights limited to weekends (Friday and Saturday) from August 15 through November 1 (weekdays may be added in the future).
- One hour before sunset to one hour after sunrise to operate check station as needed. At a minimum, Refuge biologists will operate a check station one time per month over the hunting season for a total of three opportunities to engage hunters and gauge public response.
- Data summary and reporting.
- 1 FTE; GS-7/9 level.

Law Enforcement:

- Two nights limited to weekends (Friday and Saturday) from August 15 through November 1 (weekdays may be added in the future).
- Provide routine law enforcement patrol.
- 1 to 2 FTE; GS-9 and GS-12 level.

Material Development and Printing:

- Refuge Alligator Hunt Brochure will be incorporated into the current Hunt Brochure and/or developed as a separate document.

V. DESCRIPTION OF HUNTING PROGRAM

A. Program

Season dates, bag limits, and weapon restrictions will follow the FWC guidelines to the greatest extent possible, and will be coordinated with FWC annually. More restrictive regulations will be implemented, as necessary, to conserve wildlife populations and provide for safe, quality wildlife dependent recreation. Designation of season dates will be coordinated with dates set at nearby State and Federal wildlife management areas/refuges as much as possible to allow the public a variety of hunting options throughout the season.

Waterfowl:

Hunters 16 years of age and older must be in possession of all necessary State and Federal licenses and stamps, as well as a Refuge hunt permit while hunting on the Refuge. They must possess a valid Florida State Hunting License, a Florida Waterfowl Permit, a free Migratory Bird Permit, and a Federal Migratory Bird Hunting and Conservation Stamp (Federal Duck Stamp). All hunters 16 and older must carry on their person a Federal Duck Stamp that is validated by the hunter signing across the face of the stamp in ink.

Hunters under the age of 16 must be supervised by an adult of at least 21 years of age. Hunters under 16 must also have completed a Hunter Education Course.

All hunters must read, sign, and carry the Refuge waterfowl hunt permit which is located on the front of the Arthur R. Marshall Loxahatchee National Wildlife Refuge Waterfowl Hunting Regulations brochure. By signing and carrying the permit the hunter acknowledges awareness of all Refuge regulations. Hunters must complete user information cards and place them in the fee canister after each day's hunt.

Only approved non-toxic shot may be used for waterfowl Refuge hunts. The possession of toxic shot while hunting waterfowl is prohibited. The legal weapon for waterfowl hunting is a shotgun only.

Access to the Refuge hunt area is by way of the Headquarters Area (Lee Road) and Hillsboro Area only for waterfowl hunting.

Only temporary waterfowl hunting blinds are allowed. Removal or destruction of any Refuge vegetation is prohibited. Blinds, decoys, and other personal property must be removed daily.

The use of dogs is encouraged to retrieve dead or injured waterfowl. Dogs must remain under the control of their handlers at all times.

Only water cooled outboard motor boats, canoes, and kayaks are permitted. All watercraft must comply with U.S. Coast Guard and State of Florida regulations. All boats operating outside the main perimeter of the canals are required to fly a 12 inch by 12 inch orange flag, 10 feet above the waterline.

Enforcement of Refuge regulations to protect trust resources and provide for a quality recreational opportunity will occur via regular patrols by Refuge law enforcement officers. Additionally, personnel from the Refuge will assist Refuge law enforcements officers when needed. FWC law enforcement officers will also monitor according to State protocols.

Alligators:

The current hunt area consisting of 30,000 acres of the Refuge's 143,874 acres is located on the southern end of the Refuge. Although the initial alligator hunt will be held strictly out of the Hillsboro boat ramp using the current hunt boundary, the Refuge may consider opening the Headquarters Area (Lee Road) and 20 Mile Bend to the perimeter canals in the future.

Hunters 18 years and older must be in possession of all necessary State and Federal licenses, permits, and CITES tags, as well as a Refuge hunt permit while hunting on the Refuge. They must possess an Alligator Trapping License with CITES tags or an Alligator Trapping Agent License, if applicable.

Hunters under the age of 18 may only accompany an adult of at least 21 years of age and possess an Alligator Trapping Agent License. Hunters under 16 must also have completed a Hunter Education Course.

All hunters must read, sign, and carry the Refuge alligator hunt permit which will be located on the front of the Arthur R. Marshall Loxahatchee National Wildlife Refuge Hunting Regulations brochure. By signing and carrying the permit the hunter acknowledges awareness of all Refuge regulations. Hunters must complete user information cards and place them in the fee canister after each day's hunt or provide them at a staffed check station.

The use of firearms for alligator hunting is prohibited. Bang sticks will be allowed to humanely kill alligators attached to a restraining line. The bang stick will be discharged below the waterline to reduce potential for aerial dispersal of bullet and bone fragments.

Only water cooled outboard motor boats, canoes, and kayaks are permitted. All watercraft must comply with U.S. Coast Guard and State of Florida regulations. All boats operating outside the main perimeter of the canals are required to fly a 12 inch by 12 inch orange flag, 10 feet above the waterline.

Enforcement of Refuge regulations to protect trust resources and provide for a quality recreational opportunity will occur via regular patrols by Refuge law enforcement officers. Additionally, personnel from the Refuge will assist Refuge law enforcement officers when needed. FWC law enforcement officers will also monitor according to State protocols.

<u>GAME</u>	<u>SEASON</u>
Waterfowl (ducks, coots)	The Refuge open waterfowl season is concurrent with the State season. The Refuge participates in both the early teal and regular seasons. Hunt dates and times fall within those set forth by the State (FWC) season, but may be reduced in length or time depending on waterfowl numbers, conflicting management activities (prescribed burns, low water levels, exotic plant removal, etc.), and/or staffing. Currently, the Refuge is open to hunting Wednesday through Sunday. The Refuge is closed Christmas Day. The current daily shooting hours are 30 minutes before sunrise until 1:00 p.m. All hunters must leave the Refuge by 3:00 p.m. Refuge opens at 4:00 a.m. Entry prior to this time is prohibited.
Alligators	Hunt dates and times will fall within those set forth by the State (FWC) season, but may be reduced in length or time due to alligator numbers, conflicting management activities (prescribed burns, low water levels, exotic plant removal, etc), and/or staffing. Alligator hunting shall be permitted the first two weekends during Harvest Period 1 and the first two weekends during Harvest Period 2. Following the close of Harvest Period 2, the remaining

weekends in October will be open for alligator harvest permittees that possess unused CITES tags. Additional weekends per Harvest Period or weekdays may be added in the future if there is demand and resources are available. Specific dates for the alligator hunt will be provided on the harvest permit. Alligator hunting hours will be one hour before sunset on Friday night through one hour after sunrise Saturday morning, and one hour before sunset on Saturday night through one hour after sunrise Sunday morning.

B. Opportunity

The National Wildlife Refuge System Improvement Act of 1997 allows six Priority Public uses on National Wildlife Refuges as long as they are compatible with the purposes for which the Refuge was established. These include hunting, fishing, wildlife observation, photography, environmental education, and interpretation. In order to achieve Refuge objectives and provide opportunities for the other five priority public uses, certain areas of the Refuge will remain closed to hunting for habitat management reasons.

One of the primary objectives of the Refuge is to provide wintering habitat for migratory waterfowl. To achieve this and other Refuge objectives, some areas will be designated as sanctuary areas where no hunting will be allowed.

C. Access

The USFWS will make a reasonable effort to allow hunters access to all portions of the hunt areas. The intention is to provide safe, quality hunting opportunities that consider the welfare of the Refuge's wildlife resources. Waterfowl hunt areas may be accessed by the Headquarters Area (Lee Road) or the Hillsboro area only. Access for alligator hunting will be held strictly out of the Hillsboro area; however, the Refuge may consider opening the Headquarters Area (Lee Road) and 20 Mile Bend to the perimeter canals in the future. There are parking areas by each boat ramp. Hunters are not permitted to hunt from the levees and can access the hunt area via water cooled outboard motorboats, canoes, and kayaks only.

VI. MEASURES TAKEN TO AVOID CONFLICTS WITH OTHER MANAGEMENT OBJECTIVES

A. Biological Conflicts

The Refuge has taken every precaution necessary to minimize biological conflict. Because one of the Refuge objectives is to provide, manage, and protect habitat for migratory birds, only designated areas are open for hunting. None of the hunts proposed should have any impact on endangered or threatened species on the Refuge (see 2012 Sport Hunting Plan Environmental Assessment for more information).

B. Public Use Conflicts

The Refuge annually hosts over 305,000 visitors. These visitors have a variety of interests such as photography, bird watching, fishing, hunting, wildlife observation, etc. The majority of the visitors are non-consumptive users. Some conflict may occur between waterfowl and alligator hunters and other user groups. However, due to the short nature of the hunts and almost total opposite hunting times, conflicts should be very minimal. Efforts will be made to inform the public of specific hunting dates and times.

C. Administrative Conflicts

The hunt program must be compatible with the Refuge's administrative ability to conduct a quality hunt program that provides visitors with a safe, positive hunting experience. The only administrative conflict will be reassigning employees from their primary duties to administer the hunt (issue permits, answer questions, conduct hunter checks, law enforcement patrols, etc.).

Hunting opportunities provided on Refuge are designed to result in minimal disturbance to trust resources. Minimizing disturbance factors and potential impacts are a primary consideration in season and regulation development.

VII. HUNT SPECIFICS

A. Refuge-specific Regulations

The following activities are prohibited:

1. Use or possession of alcoholic beverages while hunting or operating a boat.
2. Littering.

3. Camping/overnight parking.
4. Taking of plants (or parts of), including cutting trees or brush.
5. Taking of wildlife (or parts of), including antlers and skulls, except where authorized (hunting and fishing).
6. Discharging of firearms if not engaged in hunting activities.
7. Baiting or hunting over bait.
8. Hunting from any road, levee or in any area that is not clearly posted as open to hunting.
9. Marking trails with non-biodegradable flagging tape.
10. Trapping.
11. Riding horses or ATVs.
12. Fires.
13. Blocking gates or roadways with vehicles.
14. Use of airboats or any other boat that is not a water cooled outboard motor boat, canoe, or kayak.

The following are required:

1. All applicable State Hunting licenses, State permits, CITES tags, Federal stamps, and Refuge hunt permits.
2. Hunters under the age of 16 must be accompanied by an adult 21 years of age or older to hunt waterfowl and coot. Hunters under the age of 16 must also have completed a Hunter Education Course.
3. Alligator hunters under the age of 18 must possess a valid Alligator Trapping Agent License and be accompanied by an adult 21 years of age or older. Hunters under the age of 16 must have also completed a Hunter Education Course.
4. Only shotguns (with non-toxic shot) for waterfowl hunting. Only bang sticks may be used for alligator hunting.
5. All hunters must enter and exit the Refuge from designated gates only (Headquarters Area or Hillsboro Area only for waterfowl and Hillsboro Area for alligators).
6. For waterfowl hunting, the Refuge is open to public access from 4:00 a.m. to an hour after sunset. Shooting hours are 30 minutes before sunrise until 1:00 p.m., Wednesday through Sunday.
7. Alligator hunting will be structured like FWC's program operated on the STAs, and will take place as follows: one hour before sunset on Friday night through one hour after sunrise Saturday morning, and one hour before sunset on Saturday night through one hour after sunrise Sunday morning. Alligator hunting shall be permitted the first two weekends during Harvest Period 1 and the first two weekends during Harvest Period 2. Following the close of Harvest Period 2, the remaining weekends in October will be open for alligator harvest permittees that possess unused CITES tags. Additional weekends per Harvest Period or weekdays may

be added in the future if there is demand and resources are available. Specific dates for the alligator hunt will be provided on the harvest permit. Only alligators greater than 5 feet in length may be harvested.

B. Hunter Application and Registration Procedures

Waterfowl:

Hunters 16 years of age and older will be required to carry an annual Refuge permit, valid Florida State Hunting License, a Migratory Bird Permit, a Florida Waterfowl Permit, and a signed valid Federal Migratory Bird Hunting and Conservation Stamp.

Hunters under the age of 16 are required to carry an annual Refuge permit and must be supervised by an adult of at least 21 years of age. Hunters under 16 must also have completed a Hunter Education Course.

Each hunter will be required to fill out user information cards for waterfowl and place them in the fee canister after each day's hunt.

Refuge permits may be obtained at the Refuge Visitor Center, Headquarters Area fee booth, Hillsboro Area boat ramp, and on-line at the Refuge's website.

Alligators:

All hunters will be required to carry an annual Refuge permit, valid Alligator Trapping License or Alligator Trapping Agent License, if applicable. Each hunter will be required to fill out user information cards for alligators and place them in the fee canister after each day's hunt or provide them at staffed check stations.

Hunters under the age of 18 may only accompany an adult of at least 21 years of age and possess an Alligator Trapping Agent License. Hunters under 16 must also have completed a Hunter Education Course.

Hunters will have to apply to the FWC for the designated AMU for the Refuge. Alligator Trapping Licenses and CITES tags will be distributed by the FWC if the hunter is drawn. There will be a limit on available licenses. Refuge permits may be obtained at the Refuge Visitor Center, Headquarters Area fee booth, Hillsboro Area boat ramp, and on-line at the Refuge's website.

C. Hunter Orientation

An Annual Hunt meeting is currently held at the Refuge prior to waterfowl season. This meeting will continue and incorporate the alligator hunt.

Hunters have the opportunity to ask questions and raise concerns regarding the hunts during this meeting. In addition, a map of the Refuge will be included in the general hunt brochure. The map will clearly define all Refuge roads, trails, public use areas, closed areas, etc. These areas will also be well marked with signs or paint. Participants in the hunting program will be able to access the non-sanctuary portions of the Refuge year-round to acquaint them with the Refuge. Hunters can also address questions to Refuge staff by calling, writing, or e-mailing the Refuge headquarters.

D. Hunter Requirements

1. Age - Individuals under 16 years of age are subject to the following regulations:

Youth hunters must have successfully passed a state-approved hunter education course. While hunting, youth hunters must possess a certificate that illustrates satisfactory completion of the course.

Youth hunters must be supervised by an adult 21 years of age or older while hunting and must remain in sight and normal voice contact with that adult.

During hunts, one adult may supervise up to two youth.

2. Allowable equipment - Any weapons possessed by hunters must be specified as appropriate and permitted by State and Refuge regulations. Only non-toxic shot of the appropriate size specified by State and Federal regulations will be allowed by hunters utilizing shotguns in the pursuit of waterfowl. All blinds must be portable. Bang sticks will be used for alligator hunting.
3. License and permits - All hunters are required to possess and carry all applicable State and Federal permits, licenses, and stamps while hunting. Refuge hunt permits are available at the Refuge headquarters, Hillsboro Area boat ramp, and on-line at the Refuge's website. When the permit is signed and in the hunter's possession, the hunter acknowledges understanding of all Refuge regulations.
4. Reporting requirements – Each hunter is required to complete user information cards and place them in the fee canister at the end of each day's hunt.

5. Hunter training and safety - All hunters are required to comply with State regulations regarding the Hunter Safety Course. Youth hunters are required to have the Hunter Safety Course.
6. Vehicles - All motor vehicles are restricted to designated roads and parking areas. Only water cooled outboard motor boats, canoes, and kayaks are allowed.
7. Access - All access beyond the parking areas, into the hunt areas, will be via water cooled outboard motor boats, canoes, and kayaks only.

VIII. REFERENCES

Florida Fish and Wildlife Conservation Commission, 2011. Waterfowl Management Program. 2010-2011 Annual Report.

Florida Fish and Wildlife Conservation Commission, 2011. Alligator Quota Model Output.

Florida Fish and Wildlife Conservation Commission, 2012. Alligator Quota Model Output.

Mazzotti, F.J. 1999. Everglades-South Florida Assessments: Science Review. In Bioregional Assessments: Science at the Crossroads of Management and Policy. Johnson, K.N., F. Swanson, M. Herring, and S. Greene, eds. Island Press. Washington, D.C. 398pp.

North American Waterfowl Management Plan, Plan Committee. 2004. North American Waterfowl Management Plan 2004. Strategic Guidance: Strengthening the Biological Foundation. Canadian Wildlife Service, U.S. Fish and Wildlife Service, Secretaria de Medio Ambiente y Recursos Naturales, 22 pp.

U.S. Fish and Wildlife Service (USFWS). 1950 – 1998. Arthur R. Marshall Loxahatchee National Wildlife Refuge Annual Narrative. U.S. Fish and Wildlife Service. Atlanta, GA.

U.S. Fish and Wildlife Service (USFWS). 2000. Arthur R. Marshall Loxahatchee National Wildlife Refuge Comprehensive Conservation Plan. U.S. Fish and Wildlife Service. Atlanta, GA.

U.S. Fish and Wildlife Service. 2001. Waterfowl population status, 2001. U.S. Department of the Interior, Washington, D.C. USA.

Appendix A

Sample FWC State Alligator Hunt Permit Application Form

**Alligator Hunt Permit
2011-2012 Statewide Application**

You can apply online at www.fl.wildlifelicense.com (choose "Limited Entry/Quota Permits and Applications") or you can complete this form and present it to any license agent or tax collector office and they will submit your application for you.

① Are you a resident of Florida? Yes _____ No _____

② Please print your Customer ID, or driver license number, or social security number AND date of birth.

Customer ID No. _____
Or
Driver's License No. _____
Or
Social Security No. _____

AND Date of Birth MM / DD / YYYY

③ Please print your name.

Name _____
First Middle Last

APPLICATION PERIODS
All periods begin at 10:00 a.m. Eastern time
and end at 11:59 p.m. Eastern time

Phase I - Application: May 4, 2011 – May 17, 2011
- Permit Pickup Deadline: June 06, 2011

Phase II (FCFS): June 8, 2011 – June 13, 2011

Phase III (FCFS): June 15, 2011 – until all permits issued

④ Have you been convicted of any crocodilian related violation in the last ten (10) years? Yes _____ No _____

No person who has been convicted of any violation of s. 379.409 or s. 379.3015 or the rules of the commission relating to the illegal taking of crocodilian species shall be eligible for issuance of a license for a period of 5 years subsequent to such conviction. In the event such violation involves the unauthorized taking of an endangered crocodilian species, no license shall be issued for 10 years subsequent to the conviction. Any false statement will render the permit void, and will subject the applicant to prosecution under applicable law.

⑤ Please indicate which ONE of the following you are applying for.

Check One	License and Permit Types	App Fee	Permit Fee
<input type="checkbox"/>	Resident Alligator Trapping License (includes 2 tags for the harvest of 2 alligators)	\$0	\$272
<input type="checkbox"/>	NonResident Alligator Trapping License (includes 2 tags for the harvest of 2 alligators)	\$0	\$1,022
<input type="checkbox"/>	Permit for 2 Tags (must already have an Alligator Trapping License valid through 11/1/11)	\$0	\$62

⑥ In order of preference, choose up to 5 Harvest Unit Numbers (from the location map on page 2 of this worksheet) and appropriate Harvest Period Number and write them in the spaces provided below. Choose only the areas that you want to hunt and include only those periods when you can actually participate.

HUNT CHOICES	ENTER HARVEST UNIT	ENTER HARVEST PERIOD
1 ST Choice		
2 ND Choice		
3 RD Choice		
4 TH Choice		
5 TH Choice		

HARVEST PERIOD NO.	HARVEST PERIOD HUNT DATES*
1	Aug. 15 to Aug. 22 and Sep. 12 to Nov. 1
2	Aug. 22 to Aug. 29 and Sep. 12 to Nov. 1
3	Aug. 29 to Sep. 5 and Sep. 12 to Nov. 1
4	Sep. 5 to Sep. 12 and Sep. 12 to Nov. 1

*STA harvest units have unique harvest periods which include weekends only. The hunt dates and harvest period numbers are listed on page 2.

⑦ Present this application to a license agent or tax collector office.

Submitting false information or using another person's identity without their consent is considered identity theft and may result in felony charges and the loss of hunting privileges.

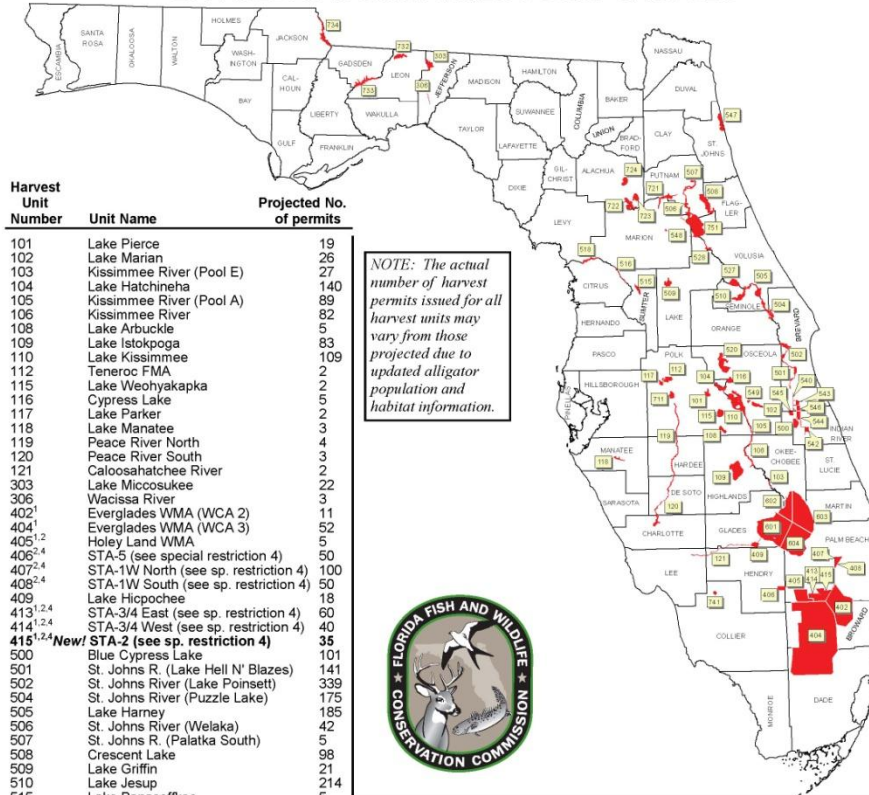
The Florida Fish and Wildlife Conservation Commission (FWC) collects social security numbers (SSN) for the issuance of recreational and professional fishing or hunting licenses or permits to an individual in accordance with chapter 379 F.S. and 42 USC 666 for the purposes of administration of the Title IV-D program for child support enforcement, use by the Commission, and as otherwise provided by law.

-----FOR AGENT USE ONLY-----

LICENSE AGENTS (including Leon County Wal-Mart locations) To Submit an Application: <ul style="list-style-type: none"> • F4 Limited Entry/Quota • F1 Apply for Permit • F1 Limited Entry • Answer residency question • Enter customer info as prompted • Enter privilege code per table below • Answer questions as prompted according to the customer's input above • Proceed through to end of transaction • Print document for customer 	TAX COLLECTOR OFFICES AND WAL-MART LOCATIONS (except Leon County Wal-Mart locations) To Submit an Application: <ul style="list-style-type: none"> • Click <i>Apply for Limited Entry/Quota Permit</i> • Select Residency Type • Enter customer info as prompted and click <i>continue</i> • Verify customer info for accuracy and click <i>continue</i> • Select privilege code per table below • Answer questions as prompted according to the customer's input above • Proceed through to end of transaction • Print document for customer
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Privilege Code Table			
Phase/Dates	May 4 – May 17	June 8 – June 13	June 15 – Sept 12
Privilege Code – Resident Alligator Trapping License	257	430	466
Privilege Code – NonResident Alligator Trapping License	258	465	468
Privilege Code – Permit for 2 Tags	259	464	467

2011 ALLIGATOR HARVEST UNIT CHOICES



Harvest Unit Number	Unit Name	Projected No. of permits
101	Lake Pierce	19
102	Lake Marian	26
103	Kissimmee River (Pool E)	27
104	Lake Hatchineha	140
105	Kissimmee River (Pool A)	89
106	Kissimmee River	82
108	Lake Arbuckle	5
109	Lake Istokpoga	83
110	Lake Kissimmee	109
112	Teneroc FMA	2
115	Lake Weohyakapka	2
116	Cypress Lake	5
117	Lake Parker	2
118	Lake Manatee	3
119	Peace River North	4
120	Peace River South	3
121	Caloosahatchee River	2
303	Lake Miccosukee	22
306	Wacissa River	3
402 ¹	Everglades WMA (WCA 2)	11
404 ¹	Everglades WMA (WCA 3)	52
405 ^{1,2}	Holey Land WMA	5
406 ^{1,2,4}	STA-5 (see special restriction 4)	50
407 ^{1,2,4}	STA-1W North (see sp. restriction 4)	100
408 ^{1,2,4}	STA-1W South (see sp. restriction 4)	100
409	Lake Hicpochee	18
413 ^{1,2,4}	STA-3/4 East (see sp. restriction 4)	60
414 ^{1,2,4}	STA-3/4 West (see sp. restriction 4)	40
415 ^{1,2,4} New!	STA-2 (see sp. restriction 4)	35
500	Blue Cypress Lake	101
501	St. Johns R. (Lake Hell N' Blazes)	141
502	St. Johns River (Lake Poinsett)	339
504	St. Johns River (Puzzle Lake)	175
505	Lake Harney	185
506	St. Johns River (Welaka)	42
507	St. Johns R. (Palatka South)	5
508	Crescent Lake	98
509	Lake Griffin	21
510	Lake Jesup	214
515	Lake Panasoffkee	5
516	Withlacoochee River North	2
518	Lake Rousseau	30
520	Lake Tohopekaliga	59
527	Lake Monroe	10
528	Lake Dexter	7
540	St. Johns R. Upper Basin Canals	22
542	Blue Cypress Water Mgt. Area	22
543 ¹	Broadmoor Unit - TMG WMA	3
544	Stick Marsh	19
545	Kenansville Lake	8
546 ¹	Goodwin Unit - TMG WMA	5
547 ¹	Guana River WMA	7
548	Ocala WMA	1
549	Three Lakes WMA	3
601 ¹	Lake Okeechobee (West)	298
602 ¹	Lake Okeechobee (North)	108
603 ¹	Lake Okeechobee (East)	96
604 ¹	Lake Okeechobee (South)	134
711	Lake Hancock	114
721	Rodman Reservoir	92
722	Orange Lake	425
723	Lochloosa Lake	137
724	Newnans Lake	52
732	Lake Iamonia	31
733	Lake Talquin	6
734	Lake Seminole	15
741	Lake Trafford	36
751	Lake George	159

SPECIAL RESTRICTIONS

NOTE: County or City ordinances or State rules may prohibit or restrict airboat usage, engine horsepower, and impose noise restrictions on some waterbodies. Permittees should check with local law enforcement agencies for specifics. Area boundaries will be described on issued permits and descriptions can be found on at <http://MyFWC.com/alligator>.

- ¹ The sale of alligator meat taken from these areas may be prohibited.
- ² Open days may be limited on these harvest units, and may exclude the September duck season.
- ³ Entry and exit points may be restricted to specified locations.
- ⁴ The hunts on harvest units 406, 407, 408, 413, 414, and 415 are limited to Friday and Saturday nights only. **Harvest period 1** is from Aug. 19 - Sept. 4. **Harvest period 2** includes Sept. 9 - 18 and Sept. 30 - Oct. 2. Only non-motorized boats are allowed. For more details, go to: <http://MyFWC.com/alligator>.

<u>County-wide Harvest Units</u>					
Unit Number	Unit Name	Projected No. of permits	Unit Number	Unit Name	Projected No. of permits
801	Alachua	45	848	Orange	58
802	Baker	11	849	Osceola	133
803	Bay	48	850	Palm Beach	7
804	Bradford	28	851	Pasco	4
805	Brevard	11	852	Pinellas	4
806	Broward	1	853	Polk	211
807	Calhoun	34	854	Putnam	119
808	Charlotte	31	855	Santa Rosa	58
809	Citrus	45	856	Sarasota	4
810	Clay	116	857	Seminole	4
811	Collier	4	858	St. Johns	194
812	Columbia	4	859	St. Lucie	11
814	De Soto	4	860	Sumter	34
815	Dixie	28	861	Suwannee	7
816 New!	Duval	37	862	Taylor	4
817	Escambia	21	863	Union	14
818	Flagler	14	864	Volusia	34
819	Franklin	99	865	Wakulla	28
820	Gadsden	4	866	Walton	62
821	Gilchrist	7	867	Washington	45

Harvesting on County-wide Units is prohibited as follows: in privately-owned waters and wetlands, except where access has been granted by landowners; in water management district-owned (WMD) waters and wetlands, except as designated or where access has been granted by the WMD; in federally-owned lands, wildlife refuges, and parks, except where access has been granted by the managing federal agency; in state-owned parks, preserves, reserves, and wilderness areas, except aquatic preserves that may be designated; in Indian reservations and lands leased to Indian tribes, except as designated or where access has been granted by the landowners; in wildlife management, wildlife environmental, and public small-game hunting areas, except as designated; in incorporated cities and municipalities; in publicly-owned waters closed for scientific study or protection of alligator populations; in privately-owned waters and wetlands included management programs governed by Rule 68A-25.032, F.A.C.; and in other Alligator Management Units established the respective counties.

Appendix B

Compatibility Determination

Compatibility Determination

Use: Sport Hunting – Waterfowl, Coot, and American Alligator

Refuge Name: Arthur R. Marshall Loxahatchee National Wildlife Refuge

Establishing and Acquisition Authorities: The Arthur R. Marshall Loxahatchee National Wildlife Refuge (Refuge), located in Palm Beach County, Florida, was established in 1951 by an agreement between the South Florida Water Management District and the U. S. Fish and Wildlife Service to lease 141,374 acres from the State of Florida through a Cooperative License Agreement and under the Migratory Bird Conservation Act of 1929. The area was designated as critical habitat for the endangered Everglade snail kite.

Refuge Purpose(s): The Migratory Bird Conservation Act of February 18, 1929, 45 Stat. 1222, the Act of June 30, 1948, 62 Stat. 1171, 1176, authorizing the construction of the Central and Southern Florida Flood Control Project and the Fish and Wildlife Coordination Act of March 10, 1934, 48 Stat. 401, amended by the Act of August 14, 1946, 60 Stat. 1080, authorized the establishment of Loxahatchee National Wildlife Refuge on January 1, 1951. The Refuge was created by two agreements entered into by the Department of the Interior. The first agreement is a General Plan with the Florida Game and Fresh Water Fish Commission (now the Florida Fish and Wildlife Conservation Commission) which permitted Water Conservation Area 1 to be used by the U.S. Fish and Wildlife Service (Service) for the national migratory bird management program. The second agreement is a long term License from the Central and Southern Florida Flood Control District (now the South Florida Water Management District) which provided for the use of Water Conservation Area 1 by the Service “as a Wildlife Management Area, to promote the conservation of wildlife, fish, and game, and for other purposes embodying the principles and objective of planned multiple land use.”

According to the Fish and Wildlife Coordination Act, this Refuge “...shall be administered by him (Secretary of the Interior) directly or in accordance with cooperative agreements... and in accordance with such rules and regulations for the conservation, maintenance, and management of wildlife, resources thereof, and its habitat thereon....”(16 USC § 664).

The Migratory Bird Conservation Act of 1929 states that its purpose is to be “...an inviolate sanctuary, for any other management purpose, for migratory birds.” (16 USC. § 715d).

National Wildlife Refuge System Mission: To administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Description of Use: To conduct waterfowl, coot, and alligator hunting on the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The hunt area is designated on 30,000 acres of the Refuge's total 143,874 acres. The boundary line is demarked by 26° 27.130' N. The area south of this latitude line and north of mile marker 12 and 14 are open to hunting. The hunt area is approximately 21% of the Refuge which leaves 79% of the Refuge for foraging and resting (sanctuary area) depending on environmental conditions.

Season dates, bag limits, and weapon restrictions will follow the Florida Fish and Wildlife Conservation Commission (FWC) guidelines to the greatest extent possible, and will be coordinated with FWC annually. More restrictive regulations will be implemented, as necessary to conserve wildlife populations and provide for safe, quality wildlife dependent recreation. Designation of season dates will be coordinated with dates set at nearby State and Federal wildlife management areas/refuges as much as possible to allow the public a variety of hunting options throughout the season.

The Refuge waterfowl season is concurrent with the State season. The Refuge participates in both the early teal and regular seasons. Hunt dates and times fall within those set forth by the State (FWC) season, but may be reduced in length or time depending on waterfowl numbers, conflicting management activities (prescribed burns, low water levels, exotic plant removal, etc.), and/or staffing. Currently, the Refuge is open to hunting Wednesday through Sunday. The Refuge is closed Christmas Day. The current daily shooting hours are 30 minutes before sunrise until 1:00 p.m. All hunters must leave the Refuge by 3:00 p.m. Refuge opens at 4:00 a.m. Entry prior to this time is prohibited. The Refuge does not allow waterfowl hunting from canals, levees, or those areas posted as closed.

Alligator hunt dates and times will fall within those set forth by the State (FWC) season, but may be reduced in length or time due to alligator numbers, conflicting management activities (prescribed burns, low water levels, exotic plant removal, etc), and/or staffing. Alligator hunting shall be permitted the first two weekends during Harvest Period 1 and the first two weekends during Harvest Period 2. Following the close of Harvest Period 2, the remaining weekends in October will be open for alligator harvest permittees that possess unused CITES tags. Additional weekends per Harvest Period or weekdays may be added in the future if there is demand and resources are available. Specific dates for the alligator hunt will be provided on the harvest permit. Alligator hunting hours will be one hour before sunset on Friday night through one hour after sunrise Saturday morning, and one hour before sunset on Saturday night through one hour after sunrise Sunday morning. Alligator hunting is allowed within the Refuge canals.

Waterfowl hunt areas may be accessed by the Headquarters Area (Lee Road) or the Hillsboro area only. Access for alligator hunting will be held strictly out of the Hillsboro area; however, the Refuge may consider opening the Headquarters Area (Lee Road) and 20 Mile Bend to the perimeter canals in the future. There are parking areas by each boat ramp. Hunters are not permitted to hunt from the levees and can access the hunt area via water cooled outboard motorboats, canoes, and kayaks only.

Availability of Resources: The Arthur R. Marshall Loxahatchee National Wildlife Refuge has been open to some type of hunting since its establishment in 1951. As a result, Refuge roads, signage, and other facilities as well as staff to enforce regulations and maintain these facilities have been provided by the Service. Based on the Refuge's annual budget allocation, there are enough funds and equipment resources to administer this use at the current level. Enforcement of regulations is primarily the responsibility of the Refuge, but local wardens will also assist Refuge officers during the waterfowl and alligator hunt seasons. Biologists will schedule time to coordinate the annual hunt meeting; develop hunt brochures and permits; and gather and analyze data. Staffed check stations will be operated at a limited level to gather biological data. The handling of alligator hunt applications; lottery drawing, and distribution of permits and CITES tags will be conducted by the FWC.

Anticipated Impacts of the use: Impacts to vegetation and habitat should be minor due to the limited type of approved vessel access and the typically preferred hunting locations. Refuge regulation currently permits the use of water cooled outboard motor boats, canoes, and kayaks only. Although the entire hunt area would be open for alligator hunting, it is expected that the majority of alligator hunting will be conducted in the perimeter canals. As a result, impacts from increased traffic on existing marsh trails or creation of new trails are expected to be minimal to negligible. Current restrictions on hunting from the Refuge levee system are expected to be maintained in the foreseeable future.

The total number of waterfowl harvested is not expected to increase significantly, if at all. The harvest numbers and species are determined by annual waterfowl trends and population surveys.

The overall alligator population at the Refuge is not expected to be significantly impacted as a result of hunting because of the large number of alligators in the perimeter canals and the sustainable harvest quota that will be implemented. Although there is significant variability in the data as a result of detectability, methodology, and water level issues, alligator densities have not significantly decreased since 2003. Therefore, it is expected that the Refuge could sustain a limited alligator harvest without negatively impacting alligator populations. A harvest quota will be established and evaluated each year based on monitoring surveys in the perimeter canals.

Disturbance to non-hunted birds would probably be commensurate with that caused by public users in activities such as wildlife observation, hiking, and boating. Small mammals, including marsh rabbits, are less active during the winter (waterfowl season) and nights (alligator season) when active hunting occurs, and habitat for marsh rabbit is not optimal in the hunt area. Hunters may encounter reptiles and amphibians during the hunting season, but these encounters would occur during the non-breeding season and at a time of relatively high water compared to spring and early summer levels. Therefore, there would likely not be any impact on non-hunted wildlife.

Disturbance impacts to threatened and endangered species may increase slightly due to increased use; however, significant disturbance would be unlikely. Nesting populations of

Everglade snail kite, wood storks, and other listed species would not be significantly disturbed since both the alligator hunt and waterfowl season will not be conducted during any threatened or endangered nesting season.

Conflicts between hunters and non-consumptive users might occur, but would be mitigated by time (non-hunting season) and space zoning. The Refuge would focus non-consumptive use (mainly bird watching and other wildlife viewing) in the areas that are closed to hunting. There will also be a “no hunting” area established east of the L-40 levee where the headquarters and visitor center building, Refuge residences, shop compound, other associated building facilities, hiking trails, and observation tower are located. Implementation of this “no hunting” zone would facilitate all five of the remaining Priority Public Uses as defined in the Refuge Improvement Act of 1997.

The Refuge would be promoting a wildlife-oriented recreational opportunity that is compatible with the purpose for which the Refuge was established. The public would have an increased awareness of the Arthur R. Marshall Loxahatchee National Wildlife Refuge and the National Wildlife Refuge System, and public demand for more hunting would be met. Waterfowl and alligator hunting are both very popular activities in Florida. Opening designated areas of the Refuge to alligator hunting, in addition to waterfowl hunting, would provide the hunting public with another opportunity.

Public Review and Comment: This compatibility determination will be posted and be made available for public review and comment for a period of 30 days at the Refuge Headquarters. This use has already been reviewed by the public as it was identified in the Refuge CCP. The development of the CCP, approved in September 2000, included extensive public review and input.

Determination:

This use is compatible X

This use is not compatible

Stipulations Necessary to Ensure Compatibility: Number of hunters, hunting techniques, and hunting days will be modified as needed to minimize any chance of overharvest of a particular species. Monitoring surveys will be conducted bi-annually to monitor alligator populations to ensure the hunt is not unsustainably impacting populations. Law enforcement patrols to assure compliance with hunt regulations will be conducted.

In addition, the following Refuge specific regulation requirements will be adhered to:

- All applicable State Hunting licenses, State permits, CITES tags, Federal stamps, and

Refuge hunt permits must be in the possession of the hunter.

- Waterfowl hunters under the age of 16 must be accompanied by an adult 21 years of age or older. Hunters under the age of 16 must also have completed a Hunter Education Course.
- Alligator hunters under the age of 18 must possess a valid Alligator Trapping Agent License and be accompanied by an adult 21 years of age or older. Hunters under the age of 16 must have also completed a Hunter Education Course.
- Only shotguns (with non-toxic shot) may be used for waterfowl hunting. Only bang sticks may be used for alligator hunting.
- All hunters must enter and exit the Refuge from designated gates only (only Headquarters Area or Hillsboro Area for waterfowl and only Hillsboro Area for alligators).
- For waterfowl hunting, the Refuge is open to public access from 4:00 a.m. to an hour after sunset. Shooting hours are 30 minutes before sunrise until 1:00 p.m., Wednesday through Sunday.
- Alligator hunting will be structured like FWC's program operated on the STAs, and will take place as follows: one hour before sunset on Friday night through one hour after sunrise Saturday morning, and one hour before sunset on Saturday night through one hour after sunrise Sunday morning. Alligator hunting shall be permitted the first two weekends during Harvest Period 1 and the first two weekends during Harvest Period 2. Following the close of Harvest Period 2, the remaining weekends in October will be open for alligator harvest permittees that possess unused CITES tags. Additional weekends per Harvest Period or weekdays may be added in the future if there is demand and resources are available. Specific dates for the alligator hunt will be provided on the harvest permit. Only alligators greater than 5 feet in length may be harvested.

Activities that are prohibited include:

The use or possession of alcoholic beverages while hunting or operating a boat; littering; camping/overnight parking; taking of plants (or parts of), including cutting trees or brush; taking of wildlife (or parts of), including antlers and skulls, except where authorized (hunting and fishing); discharging of firearms if not engaged in hunting activities; baiting or hunting over bait; hunting from any road, levee or in any area that is not clearly posted as open to hunting; marking trails with non-biodegradable flagging tape; trapping; riding horses or ATVs; fires; blocking gates or roadways with vehicles; use of airboats or any other boat that is not a water cooled outboard motor boat, canoe, or kayak.

Justification: The National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, and the Refuge Recreation Act of 1962 authorize public hunting on refuges where the hunting program is compatible with the other major purposes for which the area was established. Recreational hunting has been deemed compatible on the Arthur R. Marshall Loxahatchee National Wildlife Refuge. The Refuge also identifies providing the public with wildlife-oriented recreation as one of its primary objectives. During the CCP process, public interest in having the Refuge opened to alligator hunting as a recreational use as well as waterfowl was noted. Development of an alligator hunt is listed in the Public Use Goals and Objectives of the current Refuge CCP.

NEPA Compliance for Refuge Use Description: Place an X in appropriate space.

_____ Categorical Exclusion without Environmental Action Statement
_____ Categorical Exclusion and Environmental Action Statement
☒ Environmental Assessment and Finding of No Significant Impact
_____ Environmental Impact Statement and Record of Decision

Signature: _____ Date: _____
Sylvia R. Pelizza, Project Leader

Review: _____ Date: _____
Pam Horton, Regional Compatibility Coordinator

Review: _____ Date: _____
Elizabeth Souheaver, Refuge Supervisor

Concurrence: _____ Date: _____
David Viker, Regional Chief

Mandatory 10- or 15-Year Reevaluation Date: _____